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PATENT SPECIFICATION

DRAWINGS ATTACHED.



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COMPLETE SPECIFICATION

Improvements in and relating to Fastener Devices

We, UNITED-CARR FASTENER CORPORATION, a Corporation organised according to the Laws of the State of Delaware, United States of America, of 100, West Tench Street, Wilmington, New Castle, Delaware, United States of America, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention relates to fastener devices for attaching a member to an apertured panel.
In the construction of automobiles and the like it is necessary to attach various types of strip sections of varying types of material to an apertured panel structure and the invention is particularly useful as a means for securing a flexible strip or trimming, used in connection with an automobile window installation, to the frame work of the window channel. This flexible strip is particularly useful in the construction of automobile window guides as it seals the space between the side of the channel frame and the window so as to prevent the passage of air through those spaces and furthermore furnishes an anti-rattle runway for the window pane. The fastener device of the present invention is particularly adaptable to the attachment of a window channel strip to a channel frame, but is not limited to this particular use as there are many other uses to which the fastener device could be directed. In many cases the flexible strip must be secured to the supporting panel without access to the rear of the panel and therefore it is desirable that the fastener device be capable of assembly into a blind opening.

The present invention provides a fastener device for attaching a member to an apertured panel, said device being formed from a single piece of resilient sheet metal reversely bent to form a clip portion, a strip of metal being

taken from said clip portion so that said clip portion comprises a base portion and a pair of arms spaced from said base portion and joined to said base portion by said reverse bend, said strip of metal having been taken from between said arms, said reverse bend and a part of the base portion so that said strip of metal has one free end and its other end connected to said base portion, said strip of metal having been bent into a resilient loop for insertion through the aperture in the panel, the free end of the loop being located on the same side of the panel as the clip portion when the device is assembled with said panel and said loop having means for engaging opposite sides of said panel.

To enable the invention to be fully understood, one embodiment will now be described by way of example, with reference to the accompanying drawing, in which:—

Fig. 1 is a plan view, partly in section, showing a window strip having the fastener device attached thereto;

Fig. 2 is a section taken on line 2—2 of Fig. 1; 70

Fig. 3 is a section taken on line 3—3 of Fig. 2;

Fig. 4 is a section taken on line 4—4 of Fig. 2; 75

Fig. 5 is a plan view of the fastener device;

Fig. 6 is a view of the fastener device in front elevation;

Fig. 7 is a view of the fastener device in rear elevation. 80

Referring to the accompanying drawing, there is shown in Figures 1—3 a flexible window strip 10 of the ladder type construction having a strip of synthetic plastic material or rubber composition 12 superimposed thereon and having a pile or nap 14 extending upwardly therefrom. The strip 10 is attached to an apertured panel 16 by means of a fastener device 18 which includes 85

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resilient stud means 20 extending through an aperture 22 in the panel 16.

- The fastener device 18 is formed from a single piece of resilient metal reversely bent to form a clip portion comprising a lower base portion 24 and an upper portion in the form of a pair of arms 26 joined to the lower base portion by a bight portion 28. The arms 26 are spaced from the base portion 24 to define an opening adapted to receive therein the edge portion 32 of the strip 10. The arms 26 have downstruck lugs 34 formed thereon extending downwardly and toward the bight portion 28. The lugs 34 provide means for compressing the rubber or plastic strip 12 and the free ends 36 engage a channelled edge portion 38 of the strip 10 thereby locking the fastener device 18 securely in position and prevent axial or longitudinal movement.

The stud means 20 of the fastener device is formed entirely from a strip of material taken from the base portion 24, the bight portion 28 and between the arms 26. The stud means 20 is in the form of a resilient loop comprising a leg 40 bent downwardly from the base portion 24 and diverging laterally outwardly and having a lug 42 formed thereon adjacent to the end of the leg 40 connected with the base portion 24 for engaging the inner surface of the panel 16. The leg 40 then converges laterally inwardly and the strip of metal is then reversely bent to form a nose portion 46 and another leg 44. The other leg 44 has corresponding configurations to the leg 40 and has a lug 48 adjacent its free end adapted to engage the outer surface of the panel 16 and terminates in a bent portion 50 lying co-planar with the base portion 24. It will be seen that the leg 40 is located between the leg 44 and the free end of the base portion 24. Assembly of the window strip on to the apertured panel is a relatively simple matter, and is preferably carried out by first inserting the edge portion 32 of the window strip 10 between the arms 26 and the base portion 24, the free ends 36 of the lugs embedding or locking with the channelled edge portion 38 to prevent the device from being withdrawn. The window strip 10 with the fastener device attached thereto is then superposed on the apertured panel 16 and secured by pressing the resilient stud means 20 into the aperture so that the lug 42 engages the inner surface of the panel and the lug 48 engages the outer surface.

Any desired number of fastener devices may be used to attach the window strip, but it is necessary that a corresponding number of apertures be located in correct position on the panel to receive the stud means.

The illustrated fastener device is economically manufactured from a single piece of sheet metal and is particularly adapted for rapid assembly line installation without the use of specific tools.

WHAT WE CLAIM IS:—

1. A fastener device for attaching a member to an apertured panel, said device being formed from a single piece of resilient sheet metal reversely bent to form a clip portion, a strip of metal being taken from said clip portion so that said clip portion comprises a base portion and a pair of arms spaced from said base portion and joined to said base portion by said reverse bend, said strip of metal having been taken from between said arms, said reverse bend and a part of the base portion so that said strip of metal has one free end and its other end connected to said base portion, said strip of metal having been bent into a resilient loop for insertion through the aperture in the panel, the free end of the loop being located on the same side of the panel as the clip portion when the device is assembled with said panel and said loop having means for engaging opposite sides of said panel. 90
2. A fastener device according to Claim 1 wherein said loop comprises two legs, one leg extending from said base portion to a reverse bend in the loop and the other leg extending from said reverse bend in the loop to the free end of said strip of metal, said first leg being located between said other leg and the free end of the base portion. 95
3. A fastener device according to either one of the preceding claims wherein said loop has a lug bent out of said strip of metal adjacent to the end of the strip connected to the base portion to provide means for engaging the panel on the opposite side thereof from which the loop is inserted through the aperture in the panel. 100
4. A fastener device according to any one of the preceding claims wherein said loop has a lug bent out of said strip of metal adjacent the free end thereof to provide means for engaging the side of the panel from which the loop is inserted through the aperture in the panel. 110
5. A fastener device according to any one of the preceding claims wherein the free end of said strip of metal is bent so as to lie co-planar with the base portion. 115
6. A fastener device according to any one of the preceding claims wherein each arm of the clip portion has a lug bent out of the arm and directed towards said reverse bend for engaging the said member when said member is inserted between the arms and the base portion. 120

7. A fastener device for attaching a member to an apertured support substantially as described with reference to and as illustrated in the accompanying drawing.

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FIG.1.

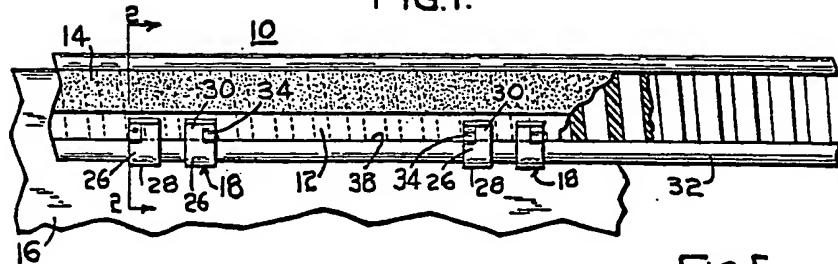


FIG.2.

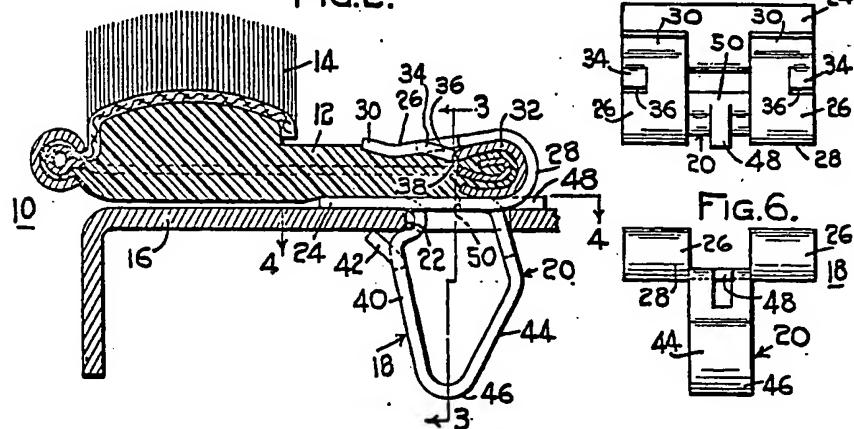


FIG.5.

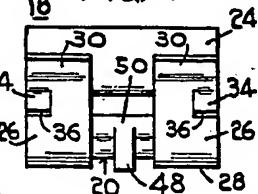


FIG.6.

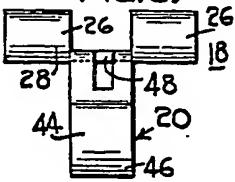


FIG.3.

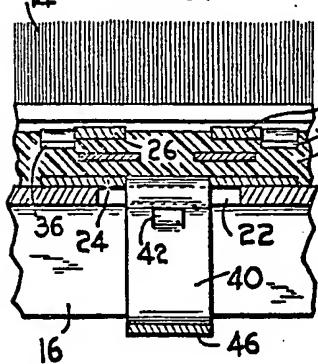


FIG.4.

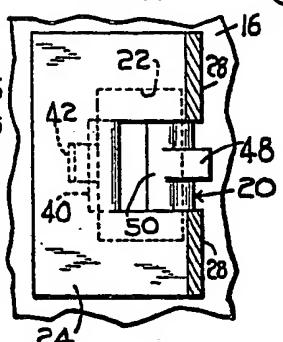


FIG.7.

